KEY WORDS INDEX

(Vol. 52)

A

accretionary prism 47
acetic acid bacteria 55, 241
acetyl phosphate 209
adenylate kinase 147
adsorption 159
AFLP 321
alkaliphile 339
alkanes 223
amino acid substitutions 9
antimicrobial activity 357
Asaia 241, 289
Asaia bogorensis 55
Asaia krungthepensis 55
Asaia siamensis 55
Aspergillus niger 179

B

Bacillus 357
Bacillus cereus (DQ002384) 125
Bacillus subtilis 119, 249
bacteriocin 357
bacterial resistance 169
bacteriocins 21
bacteriocins ST194BZ and ST23LD 159
bioaccumulation 179
bioactive peptide 357
biofilm 295
bioremediation 315
biosorption 179
biosurfactant 215
Bryndza cheese 329
Bt9816C 83
Bullera koratensis sp. nov. 73
Bullera lagerstroemiae sp. nov. 73

C

Calyptogena communities 47
carriage 169
characterization 125
chemoheterotrophy 209
chrome liquor 179
chrome tanning 179
chromium 179
Clostridium botulinum 1
Clostridium tetani 1
coconut oil 215
cold-seep 47
Coryphaenoides yaquinae 9
Cryptophyta 235
culture medium 349
culture supernatant 83
cyanobacteria 365

D

dechlorination 125
deep-sea piezophilic bacteria 9
deep-sea 47
DGGE 365
DNA gyrase inhibition 195
DNA-DNA hybridization 223
dyes 201

E

elaidic acid 29
elongation factor-1α 37
endoplasmic reticulum (ER) 137
Enterobacteriaceae 169
Enterococcus 329
Enterococcus durans 21
EPS 339
Erythrobasidium clade 37
Escherichia coli 91
extended spectrum β lactamase 169

F

fatty acid 223
fatty acids 215
fermentation 315
fluoroquinolone derivatives 195
food grade 349
FtsZ 91
fungus 201

G

GDP-mannose transporter (GMT) 137
Genista tinctoria 321
genomic diversity 321
Geobacillus 223
Glaucophyta 235
Gluconobacter 187
glucose-6-phosphate dehydrogenase 147
Golgi compartment 137
$(GTG)_5$ -PCR 329

H

haloalkaliphile 339
Halomonas 339
Halomonas alkaliphila 339
halophile 339
Haptophyta 235
heavy metals 223
hemolysis 273, 303
high sugar foods 99
homospermidine 107
hot compost 223

I

identification 99
immobilization 315
instant Chinese noodle 349
intestinal contents of deep-sea fishes 9
intron 37
isatin derivatives 195

K

kefir 375
Kluyveromyces marxianus 375
Kozakia 289

L

L31 249
lactic acid bacteria 29, 349
lactobacilli 349
Lactobacillus 29
Lactobacillus animalis 21
Lactobacillus kefiri 375
Lactobacillus plantarum 159, 349
lichen 365
lipase 315
lipid 223, 339
Listeria monocytogenes 357
luminous vibriosis 281

M

magenta 201
malate dehydrogenase (MDH) 9
marine microbes 113
microbial diversity 47
moderate halophiles 63
Moritella sp. 9
Mycobacterium smegmatis 195
Mycobacterium tuberculosis 195

N

Nankai Trough 47
Neoasaia 289
neurotoxin 1
new ballistoconidiogenous yeasts 73
new yeasts from Thailand 73
Nostoc muscorum 209
numerical taxonomy 63

O

octadecenoic acid 29
optimization 315
outer membrane permeability 295

P

Paecilomyces variotii 131

palm oil 215
PCR 281
PCR finger print 223
pentachlorophenol 125
Percolozoa 235
pgsA 91
PHB 339
PHB synthase 209
pheS gene sequence analysis 329
Phoma 201
phospholipid 91
phosphorelay 91
phylogenetic analysis 375
phylogeny 147, 289
pigment 201
polyamine 107, 235
poly-β-hydroxybutyrate 209
polyprotein 1
prodigiosin 113
α-*Proteobacteria* 187, 241
γ-proteobacteria 147
Pseudomonas aeruginosa 215, 295

Q

quorum sensing 113

R

RcsA 91
rDNA 37
rDNA sequencing 375
restriction analysis 55, 241
RFHR two-dimensional gel electrophoresis 249
rhamnolipids 215
rhizobia 321
Rhodophyta 235
ribosome 249
rRNA operon 119
rRNA secondary structure 37

S

16S rRNA 147
16S rDNA 125, 187
16S rDNA sequences 241, 289
16S-23S rDNA ITS 187
16S-23S rDNA ITS sequences 55, 289
23S rDNA sequences 289
saline environments 63
salt stress 113
salt tolerance 113
SDS-PAGE 329
sequence analysis 281
Serratia marcescens (DQ002385) 125
Serratia rubidaea 113
Shewanella sp. 9
shikimate dehydrogenase 147
SigB 259
sigma factor 259
signal transduction 91
sinapic acid 131
slime mold 107
soil isolated LAB 21
sporulation 119
Staphylococcus aureus 259
Staphylococcus epidermidis 315
starter culture 349
sulfur circulation 47
Swaminathania 289
symbiosis 365
syringaldehyde 131
syringic acid 131

T

taxonomy 55, 241
thermozymes 223
toxR 273, 281
trans fatty acid 29
transcription 119
Tween 80 349

U

ultrasound 295

V

vaccenic acid 29
Vibrio campbellii 273, 303
Vibrio harveyi 273, 281
vibriosis 273
Vip3A protein 83
viral protease 1
virulence genes 303

X

xerotolerance 99

Y

yeast 99, 137

Z

zink 249

VOLUME 52 2006

THE JOURNAL OF GENERAL AND APPLIED MICROBIOLOGY

EXECUTIVE EDITORS:

AKIRA YOKOTA (Chief) KATSUHIKO KITAMOTO SHINICHI MATSUYAMA
KENICHI NISHIYAMA AKINORI OHTA KAN TANAKA
YOSHINORI WATANABE KOJI YODA

EDITORIAL BOARD MEMBERS:

ROY H. DOI NOBUYUKI FUJITA KENSUKE FURUKAWA
AKIRA HIRAISHI SUEHARU HORINOUCHI YASUO IGARASHI
MASATOSHI INUKAI YOICHI KAMAGATA YOKO KATAYAMA
FUJIO KAWAMURA HIROSHI KOBAYASHI KAZUHIRO KOGURE
HISAYUKI MITSUI KAORU NAKASONE HIDEAKI NOJIRI
HISAYOSHI NOZAKI MASAYUKI OHMORI HIROYUKI OSADA
KEISHI SENOO MAKOTO SHIRAI SEIJI TOKUMASU

ADVISORY BOARD MEMBERS:

KÔ AIDA YONOSUKE IKEDA BUNJI MARUO
HIUGA SAITO TOMOMICHI YANAGITA

Volume 52

February 2006–December 2006

PUBLISHED by
THE MICROBIOLOGY RESEARCH FOUNDATION

THE JOURNAL OF GENERAL AND APPLIED MICROBIOLOGY

VOLUME 52 2006

CONTENTS

VOLUME 52 FEBRUARY 2006 NUMBER 1

Mini-Review

Botulinum neurotoxins: Perspective on their existence and as polyproteins harboring viral proteases
by B. R. DasGupta 1

Full Papers

Amino acid substitutions in malate dehydrogenases of piezophilic bacteria isolated from intestinal contents of deep-sea fishes retrieved from the abyssal zone
by R. Saito, C. Kato, and A. Nakayama 9

Searching for bacteriocin-producing lactic acid bacteria in soil
by F. Yanagida, Y.-S. Chen, and T. Shinohara 21

Trans fatty acids promote the growth of some *Lactobacillus* strains
by Y. Endo, S. Kamisada, K. Fujimoto, and T. Saito 29

Phylogenetic relationship within the *Erythrobasidium* clade: Molecular phylogenies, secondary structure, and intron positions inferred from partial sequences of ribosomal RNA and elongation factor-1α genes
by T. Nagahama, M. Hamamoto, T. Nakase, S. Shimamura, and K. Horikoshi 37

Comparison of the microbial diversity in cold-seep sediments from different depths in the Nankai Trough
by S. Arakawa, T. Sato, Y. Yoshida, R. Usami, and C. Kato 47

Short Communication

Identification of strains assigned to the genus *Asaia* Yamada et al. 2000 based on restriction analysis of 16S-23S rDNA internal transcribed spacer regions
by P. Yukphan, T. Malimas, W. Potacharoen, S. Tanasupawat, M. Tanticharoen, and Y. Yamada 55

VOLUME 52 APRIL 2006 NUMBER 2

Full Papers

Biodiversity of moderately halophilic bacteria in hypersaline habitats in Egypt
by H. Ghozlan, H. Deif, R. A. Kandil, and S. Sabry 63

Bullera koratensis sp. nov. and *Bullera lagerstroemiae* sp. nov., two new ballistoconidium-forming yeast species in the Trichosporonales clade isolated from plant leaves in Thailand
by B. Fungsin, M. Takashima, T. Sugita, S. Artjariyasripong, W. Potacharoen, M. Tanticharoen, and T. Nakase....73

Vip3A is responsible for the potency of *Bacillus thuringiensis* 9816C culture supernatant against *Helicoverpa armigera* and *Spodoptera exigua*
by J. Cai, L. Xiao, B. Yan, G. Bin, Y. Chen, and G. Ren....83

RcsA-dependent and -independent growth defects caused by the activated Rcs phosphorelay system in the *Escherichia coli pgsA* null mutant
by H. Nagahama, Y. Sakamoto, K. Matsumoto, and H. Hara....91

Characterization of the yeast flora present in some Turkish high-sugar products
by S. Senses-Ergul and Z. Y. Ozbas....99

Short Communications

Analysis of cellular polyamines of slime molds in comparison to the polyamine profiles of phylogenetically related organisms
by K. Hamana, H. Hagiwara, and Y. Yamamoto....107

Effect of salt stress on pigment production of *Serratia rubidaea* N-1: A potential indicator strain for screening quorum sensing inhibitors from marine microbes
by G. Yamazaki, S. Nishimura, A. Ishida, M. Kanagasabhapathy, X. Zhou, S. Nagata, T. Morohoshi, and T. Ikeda....113

Construction of *Bacillus subtilis* strains carrying the transcriptional *bgaB* fusion with the promoter region of each *rrn* operon and their differential transcription during spore development
by K. Koga, A. Ikegami, K. Nakasone, R. Murayama, G. Akanuma, Y. Natori, H. Nanamiya, and F. Kawamura....119

Isolation and characterization of two potential pentachlorophenol degrading aerobic bacteria from pulp paper effluent sludge
by R. Chandra, A. Ghosh, R. K. Jain, and S. Singh....125

Conversion of sinapic acid to syringic acid by a filamentous fungus *Paecilomyces variotii*
by G. Mukherjee, A. Sachan, S. Ghosh, and A. Mitra....131

VOLUME 52 JUNE 2006 NUMBER 3

Full Papers

Molecular cloning and characterization of a *Pichia pastoris* ortholog of the yeast Golgi GDP-mannose transporter gene
by K. Arakawa, M. Abe, Y. Noda, H. Adachi, and K. Yoda....137

Phylogenetic analysis of γ-proteobacteria inferred from nucleotide sequence comparisons of the house-keeping genes *adk*, *aroE* and *gdh*: Comparisons with phylogeny inferred from 16S rRNA gene sequences
by H.-Y. Lee and J.-C. Côté....147

Factors affecting the adsorption of bacteriocins ST194BZ and ST23LD to *Lactobacillus sakei* and *Enterococcus* sp.
by S. D. Todorov, M. Meincken, and L. M. T. Dicks 159
Extended spectrum β-lactamase producing Enterobacteriaceae in Lebanese ICU patients: Epidemiology and patterns of resistance
by Z. Daoud, C. Moubareck, N. Hakime, and F. Doucet-Populaire 169
Bioaccumulation and biosorption of chromium by *Aspergillus niger* MTCC 2594
by J. G. S. Mala, B. U. Nair, and R. Puvanakrishnan 179
Intrageneric structure of the genus *Gluconobacter* analyzed by the 16S rRNA gene and 16S-23S rRNA gene internal transcribed spacer sequences
by M. Takahashi, P. Yukphan, Y. Yamada, K. Suzuki, T. Sakane, and Y. Nakagawa 187

VOLUME 52 AUGUST 2006 NUMBER 4

Full Papers

Evaluation of antimycobacterial and DNA gyrase inhibition of fluoroquinolone derivatives
by D. Sriram, T. R. Bal, P. Yogeeswari, D. R. Radha, and V. Nagaraja 195
Magenta pigment produced by fungus
by S. Chiba, N. Tsuyoshi, R. Fudou, M. Ojika, Y. Murakami, Y. Ogoma, M. Oguchi, and S. Yamanaka 201
Studies on poly-β-hydroxybutyrate synthase activity of *Nostoc muscorum*
by L. Sharma, B. Panda, A. K. Singh, and N. Mallick 209
Biosurfactant production by *Pseudomonas aeruginosa* A41 using palm oil as carbon source
by J. Thaniyavarn, A. Chongchin, N. Wanitsuksombut, S. Thaniyavarn, P. Pinphanichakarn, N. Leepipatpiboon, M. Morikawa, and S. Kanaya 215
Geobacillus toebii subsp. *decanicus* subsp. nov., a hydrocarbon-degrading, heavy metal resistant bacterium from hot compost
by A. Poli, I. Romano, G. Caliendo, G. Nicolaus, P. Orlando, A. de Falco, L. Lama, A. Gambacorta, and B. Nicolaus 223

Short Communications

Cellular polyamines of lower eukaryotes belonging to the phyla Glaucophyta, Rhodophyta, Cryptophyta, Haptophyta and Percolozoa
by K. Hamana and M. Niitsu 235
Identification of strains assigned to the genus *Asaia* Yamada et al. 2000 based on 16S rDNA restriction analysis
by P. Yukphan, T. Malimas, M. Takahashi, M. Kaneyasu, W. Potacharoen, S. Tanasupawat, Y. Nakagawa, M. Tanticharoen, and Y. Yamada 241

VOLUME 52 OCTOBER 2006 NUMBER 5

Review

Proteomic study of the *Bacillus subtilis* ribosome: Finding of zinc-dependent replacement for ribosomal protein L31 paralogues
by H. Nanamiya, F. Kawamura, and S. Kosono 249

Full Papers

Genetic characterization of the natural SigB variants found in clinical isolates of *Staphylococcus aureus*
by Y. Inose, S. L. Takeshita, T. Hidaka, M. Higashide, A. Maruyama, H. Hayashi, K. Morikawa, and T. Ohta 259

Differential detection of vibrios pathogenic to shrimp by multiplex PCR
by C. D. M. Castroverde, B. B. San Luis, R. G. Monsalud, and C. T. Hedreyda 273

Amplification and sequence analysis of the full length *toxR* gene in *Vibrio harveyi*
by P. F. Franco and C. T. Hedreyda 281

Short Communications

Phylogenetic relationships between the genera *Swaminathania* and *Asaia*, with reference to the genera *Kozakia* and *Neoasaia*, based on 16S rDNA, 16S-23S rDNA ITS, and 23S rDNA sequences
by P. Yukphan, T. Malimas, M. Takahashi, M. Kaneyasu, W. Potacharoen, S. Tanasupawat, Y. Nakagawa, M. Tanticharoen, and Y. Yamada 289

Low-frequency ultrasound increases outer membrane permeability of *Pseudomonas aeruginosa*
by C. M. Runyan, J. C. Carmen, B. L. Beckstead, J. L. Nelson, R. A. Robison, and W. G. Pitt 295

VOLUME 52 DECEMBER 2006 NUMBER 6

Full Papers

Analysis of a gene (*vch*) encoding hemolysin isolated and sequenced from *Vibrio campbellii*
by B. B. San Luis and C. T. Hedreyda 303

Studies on the enhanced production of extracellular lipase by *Staphylococcus epidermidis*
by B. Joseph, P. W. Ramteke, and P. A. Kumar 315

Application of the AFLP method to differentiate *Genista tinctoria* microsymbionts
by M. Kalita and W. Małek 321

Molecular identification and diversity of enterococci isolated from Slovak Bryndza cheese
by D. Jurkovič, L. Križková, M. Sojka, A. Belicová, R. Dušinský, J. Krajčovič, C. Snauwaert, S. Naser, P. Vandamme, and M. Vancanneyt 329

Halomonas alkaliphila sp. nov., a novel halotolerant alkaliphilic bacterium isolated from a salt pool in Campania (Italy)
by I. Romano, L. Lama, B. Nicolaus, A. Poli, A. Gambacorta, and A. Giordano.....339
Development of food grade media for the preparation of *Lactobacillus plantarum* starter culture
by Y. Sawatari, T. Hirano, and A. Yokota.....349

Short Communications

Purification and partial characterization of an antimicrobial peptide produced by *Bacillus* sp. strain P45, a bacterium from the Amazon basin fish *Piaractus mesopotamicus*
by L. R. Sirtori, F. Cladera-Olivera, D. M. Lorenzini, S.-M. Tsai, and A. Brandelli.....357
Isolation and characterization of cyanobacteria from lichen
by S. Miura and A. Yokota.....365
Isolation and molecular taxonomy of two predominant types of microflora in Kefir
by J.-C. Heo and S.-H. Lee.....375

Acknowledgment.....381
Key Words Index for Vol. 52.....383
Contents of Vol. 52..... i